

ABSTRACT OF THE DISCLOSURE

A heater and a counterflow heat exchanger are arranged inside a pressure vessel, having an inlet connected to a pressurizing device and an outlet connected to a depressurizing device. To thermally sterilize a microbiologically contaminated liquid, the inflowing contaminated liquid is pressurized and pumped into the pressure vessel, where it is pre-heated by flowing along the heat exchanger and then heated to the required treatment temperature by the heater. The arising treated liquid is cooled by flowing along the heat exchanger and is then depressurized upon exiting the pressure vessel. Thermal energy is transferred from the outflowing liquid to the inflowing liquid by the heat exchanger. Pressure energy is transferred from the outflowing liquid to the inflowing liquid by the interconnected depressurizing and pressurizing devices. A high proportion of the total required energy is retained within the system, and high treatment temperatures (above the atmospheric boiling point) are efficiently achievable.

USPS EXPRESS MAIL
EV 338 198 779 US
JANUARY 14 2004